DOCUMENT RESUME

ED 244 107 CE 038 939

AUTHOR Finch, Curtis R.; Asselin, Susan B.
TITLE A Conceptual Framework for Vocational Special Needs Teacher Competence.
SPONS AGENCY Department of Education, Washington, DC.
PUB DATE Apr 84
GRANT G008301464
NOTE 23p.; Paper presented at the Annual Meeting of the American Educational Research Association (68th, New Orleans, LA, April 23-27, 1984).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Descriptive (141)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Competence; Competency Based Education; *Competency Based Teacher Education; *Disabilities; Disadvantaged; Higher Education; Secondary Education; Special Education; Teacher Education; *Teaching Skills; *Vocational Education Teachers
IDENTIFIERS *Conceptual Frameworks; *Special Needs Students

ABSTRACT

More relevant content for vocational special needs teacher education programs was identified through a review of the literature on teacher competencies in vocational special needs education. These competencies were then fitted into a multidimensional framework that included three dimensions of competence--task, human, and environmental. Following the narrative section, an example is provided from a current project in the vocational special needs field in order to highlight ways the framework might apply to teacher education. A brief description of the project, entitled "A Competency-Based, Field-Based Master's Program for Vocational Special Education," is followed by the constraints associated with delivering a field-based, competency-based master's degree program. Finally, alignment of program content with the framework is discussed. One table and two figures are appended. (YLB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)
This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.
Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

A CONCEPTUAL FRAMEWORK FOR VOCATIONAL SPECIAL NEEDS TEACHER COMPETENCE[1]

Curtis R. Finch and Susan B. Asselin[2]

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

C Finch

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

ED244107

INTRODUCTION

With the passage of specific legislation concerning vocational education for special needs students and subsequent emphasis from federal agencies, many vocational teacher educators realized it was time to reassess their teacher preparation programs. For those institutions choosing to conduct program assessments, it became very obvious that students enrolled in vocational teacher education courses were not being prepared to teach special needs students. This was even the case with programs that had, in the not too distant past, converted to a competency-based mode. Although competencies had been identified, verified, and implemented, the competency selection process typically included an examination of teacher tasks to see which were rated as being important to success in teaching (eg. Cotrell, Chase and Molnar, 1972). Such efforts focused on discrete units of work, each having a definite beginning and ending point. While worthy, this sort of focus often lead to the exclusion of other aspects of competence. Teacher educators thus began to concede that "verified" tasks might not represent the scope of competencies needed by vocational special needs teachers.

This paper deals with the identification of more relevant content for vocational special needs teacher education programs. More specifically, it considers teacher preparation within a multidimensional conceptual framework.

CE038437

---

[1]Paper presented at the American Educational Research Association Annual Meeting, New Orleans, LA, April, 1984. Portions of this work were supported by U.S. Department of Education Grant G008301464 A Competency-based, Field-based Master's Program for Vocational Special Education.

[2]Dr. Finch is Professor and Graduate Studies Coordinator and Dr. Asselin is Assistant Professor, Division of Vocational and Technical Education, Virginia Polytechnic Institute and State University.

Specific questions for which answers were sought include:

1. What is the state of the art with regard to research on vocational special needs teacher competencies?

2. To what extent do these competencies fit into a multi-dimensional framework?

3. How may such a framework be applied to vocational special needs teacher education programs?

METHOD

A review of literature on teacher competencies in vocational special needs education was conducted using ERIC databases and manual searches. The review revealed the "state of the art" and traced the development of research in teacher competencies. Each study was examined to determine the existence of competencies that extended beyond important tasks performed by teachers. Studies failing to provide listings of identified competencies and those providing summaries of previous research were eliminated. A matrix was developed to examine individual competencies and assist in categorizing them. Finally, each of the conceptual dimensions from the matrix was aligned with content and experiences proposed for a competency-based, field-based vocational special needs teacher education program. Discrepancies noted between identified competencies and program content served as a basis for program refinement.

A MULTIDIMENSIONAL FRAMEWORK FOR COMPETENCE

Competence seems to be the educational buzz word of the 1970s and 1980s. It has appeared as a central theme for competency-based education, competency-based teacher education, minimum competency testing, and competency-based certification. One thus might infer that such a well used term is clearly defined. Definitions do exist; however, they tend to range from "a specific job skill that an employer expects an employee to possess in order to obtain and maintain employment" (Perry, 1982) to "a function of worthy performance"

(Gilbert, 1978). Without further clarification and an expanded scope, competence is destined to remain at least vague and at best synonomous with "important task or job skill."

Fortunately, Gilbert (1978) does provide further clarification for his definition. He notes that competence "is a function of worthy performance which is a function of the ratio of valuable accomplishments to costly behavior" (p. 18). Gilbert goes on to state that performance can be represented by at least three levels (institutional systems, job systems, and task systems) and three stages (accomplishment models, measures of opportunity, and methods of improvement). These levels and stages combine to form a performance engineering model or matrix. While detailed discussion of Gilbert's model is beyond the scope of this paper, it serves to illustrate that competence focus on more than one dimension.

Others consider competence to be multidimensional. Fiedler's (1967) contingency model indicates that an effective leader must match his or her leadership style with the demands of a particular situation. In their Managerial Grid, Blake and Mouton (1978) reflect the need for a manager to reconcile his or her concern for task accomplishment with concern for people. Redden (1970), likewise, notes that leadership involves concern for relations as well as concern for task. High concern for both relations and task results in an integrated leadership style.

The preceding observations clearly point to a need for education professionals to broaden their perspectives of competence. Not only does the vocational special needs teacher's competence include performance of important tasks; competence encompasses human factors that cut across performance of various tasks as well as the environment in which tasks are performed. We may thus consider competence as being multidimensional in scope. Although numerous dimensions of competence

may exist, the discussion that follows focuses on three. It should be noted that all three are closely related. They are dealt with separately, merely to point out their distinctive nature.

Task Dimension

The task dimension is most tangible of the three. It reflects the range of more readily observable processes and products associated with vocational special needs teacher tasks. Included would be the range of teaching responsibilities such as preparation for, execution of, and evaluation of instruction. It is relatively easy to tell when a task has begun and ended. For example, a task such as "Prepare an IEP" would begin when work on the IEP begins and end with its successful completion. Criteria to assess success could focus on both process (eg. steps to completion) and product (the written IEP).

Human Dimension

As the teacher performs various tasks, he or she interacts with others such as students, teachers, and parents. Involvement with others extends beyond tasks to the point where it tends to permeate the work environment. This dimension is consequently reflective of skills in working with other human beings. Included might be human relations expertise, empathy, creativity, and flexibility. It should be noted that none of these are tasks; they have no set beginning or end. Elements in the human dimension may extend over a week, month, or year depending on the particular situation. Empathy, for example, is not something a teacher provides from 9:00 to 10:00 a.m. on Tuesdays. It is an integral part of one's teaching and would be reflected, in varying degrees, across a range of teaching tasks.

Environment Dimension

Elements associated with the environment dimension reflect areas in which the teacher may function. Some teachers work in rural school environments while

others are employed in inner city or urban environments. Likewise, some teachers provide instruction in self-contained classrooms while others teach mainstreamed handicapped students in their regular classrooms and laboratories. It is important to note that teachers must be prepared to function in a particular environment or environments. Realistic exposure to and work in an environment assists the teacher in recognizing its peculiarities and understanding what should be done as well as when, why, and how. By its very nature the environment dimension is difficult to measure, but this should not deter us from including the dimension as part of a teacher preparation program. Tasks and human skills are useless unless they are applied properly in applied settings.

Relations Among the Dimensions

Figure 1 provides a graphic description of the ways dimensions are related.

Insert Figure 1 about here

If a vocational special needs teacher is to perform certain tasks (eg. preparation for, execution of, and evaluation of instruction), he or she cannot ignore the human dimension (eg. human relations expertise, empathy, creativity, flexibility) or the environment dimension (eg. where will the teaching take place? under what conditions?). Although it is impossible to keep in mind all relationships among the three dimensions, one should remember that competence is multidimensional in scope and reflects a broad range of involvement with human beings, tasks, and environments (Finch & McGough, 1982).

RESEARCH ON TEACHER COMPETENCE: CURRENT STATUS

Twenty studies addressing vocational special needs teacher competencies were identified and reviewed. Of the twenty, twelve were deemed appropriate

for inclusion in this review. An examination of special education competencies for teachers revealed a limited number of relevant studies. Most studies identified competencies by handicapping condition such as emotional disturbance and mental retardation. Dinger (1971) and Bitter (1971) identified teacher competencies for working with educable mentally retarded (EMR) adolescents. Hewitt (1966) reported seven necessary competencies of teachers serving emotionally disturbed (ED) students. Each of these studies indicated the need to emphasize non-task oriented competencies such as resourcefulness, objectivity, understanding, and developing self-concept of the student. While the emphasis of these studies was on special education, Dinger (1971) mentioned the need for skill development in prevocational skills. Brolin (1972) attempted to bridge the gap between special and vocational education when he identified 31 competencies for teachers of secondary EMR students to include prevocational and vocational skills.

In terms of competencies needed by vocational teachers, Cotrell, Chase and Molnar (1972) reported 384 competencies needed by vocational teachers. This comprehensive study laid the groundwork for future research in vocational special needs teacher education; however, none of the competencies cited in the Cotrell study focused directly on vocational special needs teacher competence. Many of the competency studies concentrated primarily on instructional tasks with few addressing human factors or the environment. Researchers in vocational special needs attempted to verify specific tasks as being important and then recommended incorporation into teacher education programs (eg. Albright, Nichols & Rinchatz, 1975; Eads, Hogan & Babcock, 1975; Andreyka, Black & Clark, 1975; Phelps, 1976; Tulloch & Omvig, 1980; Hamilton & Harrington, 1980).

Ferns (1971) identified nine training needs for vocational teachers, including interpersonal competencies. These consisted of compassion for and understanding

individuals, developing human relations skills, and handling potentially explosive urban situations. Similar human competencies including sensitivity, initiative, and positive personal interaction were cited as important in a more recent study by Kienast and Lovelace (1981). Sheppard (1975) reported the importance of interest in the handicapped population and ability to relate to people. A later study by Winkler and Ertel (1980) identified the paucity of research dealing with "coping skills" or the interpersonal skills of teachers. The University of Wisconsin-Stout (Brolin, 1976) also addressed 5 coping skills out of 74 identified competencies. Twenty six of the professional competencies identified by Eads, Hogan, Babcock & Block (1975) were categorized as humanistic in nature. Included were items such as valuing personal characteristics of students and teachers in terms of beliefs, prejudices, interests, and understandings. Most research, however, has centered on technical and professional skills rather than those of empathy, understanding, patience and expressing caring behavior.

Turning to the environment dimension, Winkler and Ertel (1980) allude to differences in competencies for laboratory, classroom, and resource room teaching. Earlier studies included competencies needed for vocational teachers in self-contained programs and evolved to include teachers who work in mainstream settings (Bayne & Caton, 1980) and in coordinator positions (Eads, Hogan, Babcock & Block, 1975).

Table 1 presents competencies identified in the twelve studies categorized

---

Insert Table 1 about here

---

according to task, human, and environment dimensions. It is quite clear that researchers have placed major emphasis on the tasks performed by teachers.

Even though some researchers have expressed concern about the human side of teaching, very few of these competencies have been identifed. It could be that few such competencies exist. A more plausible explanation, however, is that the human dimension is quite difficult to examine. In terms of the environment, researchers appear to have struck out. On closer examination this is not exactly true. Each researcher may have dealt with a different environment. The unfortunate aspect of the studies is that few actually stated what specific environment they were concerned about. In most cases, the research had a very broad focus with little or no documentation of the settings where tasks and human elements may be applied.

APPLICATION TO TEACHER EDUCATION

In order to highlight ways the framework might apply to teacher education, an example is provided from a current project in the vocational special needs field. First, a brief description of the project is provided. This is followed by the constraints associated with delivering a field-based, competency-based Master's degree program. Finally, alignment of program content with the framework is discussed.

The Project

Titled "A Competency-based, Field-based Master's Program for Vocational Special Education," this three year project is being conducted at Virginia Polytechnic Institute and State University with support from the U.S. Department of Education. The project's purpose is to develop and implement a competency-based and field-based Master's level vocational special needs teacher education program. The project consists of two phases. Phase one involves gathering resources and information related to vocational special needs teacher education competencies and the design of program structure and content based upon the competencies. Phase two focuses on implementation and evaluation of the

vocational special needs teacher education program.

Essentially, the project has two goals. First, a model competency-based, field-based program in vocational special education will be developed and implemented. This model program should assist other states in developing quality teacher preparation programs. The program will also encourage establishment of certification or endorsements for vocational special educators in Virginia and expansion of bachelor and graduate program offerings in Virginia colleges and universities. As a second goal the program will produce a cadre of forty highly trained individuals. These teachers will be prepared to instruct and coordinate vocational programs for handicapped students and serve as resource persons to other vocational teachers.

Constraints

As with any program, there are certain factors that serve to restrict what will be a part of the content and student experiences. Of perhaps greatest importance are graduate degree requirements. Each candidate for the Master's degree at VPI & SU must complete forty-five quarter hours of graduate course work distributed across three areas: the core, the concentration, and the cognate. Credit hour minimums in each of the areas is as follows:

core - 15 quarter hours

concentration - 15 quarter hours

cognate - 9 quarter hours

In the Vocational and Technical Education (VTE) Division, students take VTE foundations, curriculum, and program planning courses together with two research courses to satisfy the core requirement. This is a major constraint since it spells out specific content that must be a part of each student's program. Greater flexibility exists in the concentration area since special focus seminars and internships may be developed to meet students' needs. In the cognate area,

students may choose to focus on courses from fields such as school psychology, special education, and vocational rehabilitation. This is perhaps one of the most flexible aspects of the program.

Since VPI & SU has no residency requirement for the Master's degree, students may take courses offered anywhere in the state (or world, for that matter). A basic stipulation is that at least one half of the courses (23 hours) must be taught by regular VPI & SU faculty. Additionally, up to half of the program courses may be taken from other institutions in the Commonwealth if approved by the student's advisor. This has the advantage of enabling students to take cognate courses at other institutions when content is relevant to their career goals.

Finally, the program is to be both field-based and competency-based. Field-based is interpreted to mean that students are currently employed in the field and that the program will be brought to them. Likewise, students will be afforded an opportunity to apply what they learn in actual field settings. In order to be competency-based, program content and experiences should be built upon those skills, knowledges, attitudes, values and appreciations that are deemed critical to successful employment. The program should, of course, focus on the task, human, and environment dimensions of competence. This will ensure that students are prepared to assume teacher/leader roles in the vocational special needs field.

Alignment

Given a program with certain constraints and a multidimensional framework, how can content be selected and organized to maximize student learning and development? This is a question that will continue to be asked over the next two plus years as the project moves from program development to implementation. The project's first year has been devoted to program conceptualization and content decisions while the subsequent two years will examine the affects of those decisions.

Initial efforts to derive content focused on a review of existing competency studies. Results of this work were presented in an earlier section of the paper. The comprehensive nature of Hamilton and Harrington's (1980) study seemed to provide a meaningful base for the task dimension; however, questions were raised about applicability of identified competencies to teachers serving special needs students in mainstreamed and self contained programs as well as in vocational resource environments. Since the competencies primarily addressed teachers in mainstreamed and self contained settings, it was necessary to identify competencies specific to vocational resource teachers. Twelve teachers were identified as "model" vocational special needs resource educators (VSNRE). Each of the VSNRE's agreed to participate in a two day DACUM (Developing A Curriculum) session which was facilitated by James Hamilton from the National Center for Research in Vocational Education, Ohio State University. A total of 78 essential competencies were documented and placed into nine descriptive categories (eg. provide for student vocational assessment). Panel members were also asked to describe personal attributes (human aspects) they felt were important for the vocational special needs resource person to possess. Nine competencies ranging from "possess leadership ability" to "demonstrate appropriate interpersonal skills" were identified by the group. To further verify the competencies, a survey instrument containing the items identified via DACUM was mailed to 43 vocational special needs resource educators across Virginia. Respondents as a group indicated that all items were at least "important" with many being "very important."

Further verification of competencies was accomplished by conducting a survey of Virginia's vocational teachers. One thousand teachers who might work with special needs students in mainstreamed or self contained environments were asked to participate. Each was randomly selected from current teacher directories and reflected service in one of eight vocational teaching areas. In this case, the 380 statements from Hamilton and Harrington's study were combined into 85 potential

competencies (tasks). Respondents to this survey felt as a group that all 85 tasks were "important" or "very important." They also indicated that all tasks were performed either occasionally (at least once every 4 to 6 weeks) or frequently (at least once per week).

Alignment of content with constraints and the multidimensional framework basically consisted of determining how content elements and delivery of these elements could be fit into a rather traditional program structure. Two basic teaching environments were identified as focal points for the program: vocational teachers working with special needs students and vocational special needs resource educators. It was thus necessary to provide students with opportunities for relevant experiences in two different environments. In actuality, most students would choose only one of the two environments in which to receive instruction. Given the environments as well as identified task and human dimensions it was then necessary to array dimensions across the program. Table 2 provides an initial conceptualization of this arrangement.

Insert Table 2 about here

Note that various items identified with each dimension are taught initially by dimension and later presented in an integrated form. This approach should aid students in applying what is learned in classes to realistic work settings.

An additional aspect of content deals with instruction provided by dimension in contrast with instruction that integrates the various dimensions. Figure 2

Insert Figure 2 about here

---

provides some insight into how this will be accomplished. Initial aspects of the program will emphasize instruction focusing on the various dimensions,

whereas, later instruction will shift into an integrated mode. It must be recognized that certain aspects of the dimensions must be infused into others. Thus, "serving as an effective mediator" in the human dimension might be an important aspect of "provide input to advisory committees" as well as other important tasks. Figure 2, therefore, presents more of a general flow than a rigid mandate to provide certain instruction at certain times.

CONCLUSIONS

This paper has focused on the development of a conceptual framework for teacher competence. Highlighted was the logic behind such a framework including the task, human, and environment dimensions. When the framework was applied to research conducted in the vocational special needs teacher competence area, few studies could be identified that dealt with the human and environment dimensions, even though several scholars recognized the need for such a focus. Application of the framework to a competency-based, field-based program for vocational special needs teachers proved to be at least reasonably successful. Tasks, human aspects, and environments could be identified and arrayed across the program to provide students with meaningful learning experiences. The next several years will provide a further test bed for the framework. However, as currently presented, the three dimensions of competence should provide professionals with much food for thought as they consider ways to make their programs more relevant to the needs of practicing and prospective vocational special needs teachers.

REFERENCES

Albright, L., Nichols, C., & Rinchak, J. (1975) Identification of professional competencies necessary for teachers of disadvantaged and handicapped youth. Kent, Ohio: Ohio Department of Education. (ERIC Document Reproduction Service No. ED 126 309)

Andreyka, R., Blank, W. & Clark W. (1976) Exemplary competency based vocational teacher education project: handicapped component. (Service No. 9). Tallahassee, FL: Florida State University. (ERIC Document Reproduction Service No. 131 231)

Bayne, G.K. & Caton, H. (1979) Developing teacher competencies in working with handicapped students. Louisville, KY: University of Louisville. (ERIC Document Reproduction Service No. ED 177 331)

Bitter, J.A. (1976) Special education for the EMR adolescent: student needs and secondary education teacher competencies. In Abbas, E.K. and Settington, P.L. Issues in Preparation of Personnel for Programming of Special Needs Students: Synopses and Selected Materials. Urbana-Champaign, IL: University of Illinois.

Blake, R.R. & Mouton, J.S. (1978) The new managerial grid. Houston, TX: Gulf Publishing Company.

Brolin, D. (1976) An investigation of teacher competencies needed to utilize diagnostic testing in prescribing occupational learning experiences in teaching educable mentally retarded students. Menomonie, WI: University of Wisconsin-Stout.

Brolin, D. (1972) Preparing teachers of secondary level educable mentally retarded: new model project, final report. Monomonie, WI: University of Wisconsin-Stout.

Cotrell, C; Chase, S; & Molnar, M. (1972) Model curricula for vocational and technical education: Report no. V, general objectives, set II. Columbus, OH: The Center for Vocational and Technical Education, Ohio State University. (ERIC Document Reproduction Service No. ED 069 845)

Dinger, J. (1971) Needs of secondary educable mentally retarded pupil and competencies required of the teacher (Report #1 Preparing teachers of secondary level educable mentally retarded: a new model project). Menomonie, WI: University of Wisconsin-Stout.

Eads, F.D., Hogan, D., Babcock, R. & Block, K. (1975) Competencies and assessment behaviors for vocational specialists coordinating the education of handicapped learners in vocational education. Athens, GA: University of Georgia. (ERIC Document Reproduction Service No. 131 244).

Ferns, G.W. (1971) Michigan's vocational-technical education personnel development needs. Lansing, MI: Department of Education.

Fiedler, F.E. (1967) A theory of leadership effectiveness. New York: McGraw-Hill.

Finch, C.R. & McGough, R.L. (1982) Administering and supervising occupational education. Englewood Cliffs, NJ: Prentice-Hall.

Gilbert, T.F. (1978) Human competence: engineering worthy performance. New York: McGraw-Hill.

Hamilton, J. & Harrington, L. (1980) Verified vocational teacher competencies for serving students with special/exceptional needs. Columbus, OH: National Center for Research in Vocational Education, Ohio State University.

Hewitt, F.M. (1966) A hierarchy of competencies for teachers of emotionally handicapped. Exceptional Children, 3, 7-11.

Kienast, K.E. & Lovelace, B.E. (1981) Vocational education personnel development needs for working with the handicapped. Richardson, TX: Educational Innovations.

Perry, W.G., Jr. (1982) How to develop competency-based vocational education. Ann Arbor, MI: Prakken.

Phelps, A. (1976) Vocational education for special needs students: competencies and models for personnel preparation. Urbana, IL: University of Illinois. (ERIC Document Reproduction Service No. ED 132 303)

Redden, W.J. (1970) Managerial effectiveness. New York: McGraw-Hill.

Sheppard, N.A. (1975) Identification of problems and competencies needed by vocational and technical education personnel teaching persons with special in Virginia. Blacksburg, VA: Virginia Polytechnic Institute and State University. (ERIC Document Reproduction Service No. ED 112 094)

Tulloch, C. & Omvig, C.P. (1980) Competencies and preparation programs for Kentucky's special vocational teachers. Lexington, KY: University of Kentucky. (ERIC Document Reproduction Service No. ED 210 559)

Winkler, K. & Ertel, K. (1980) A comprehensive analysis of the needs of occupational education personnel for professional development in special education competencies. Ameherst, MA: University of Massachusetts. (ERIC Document Reproduction Service No. ED 217 118)

Figure 1

Relationships among competence dimensions

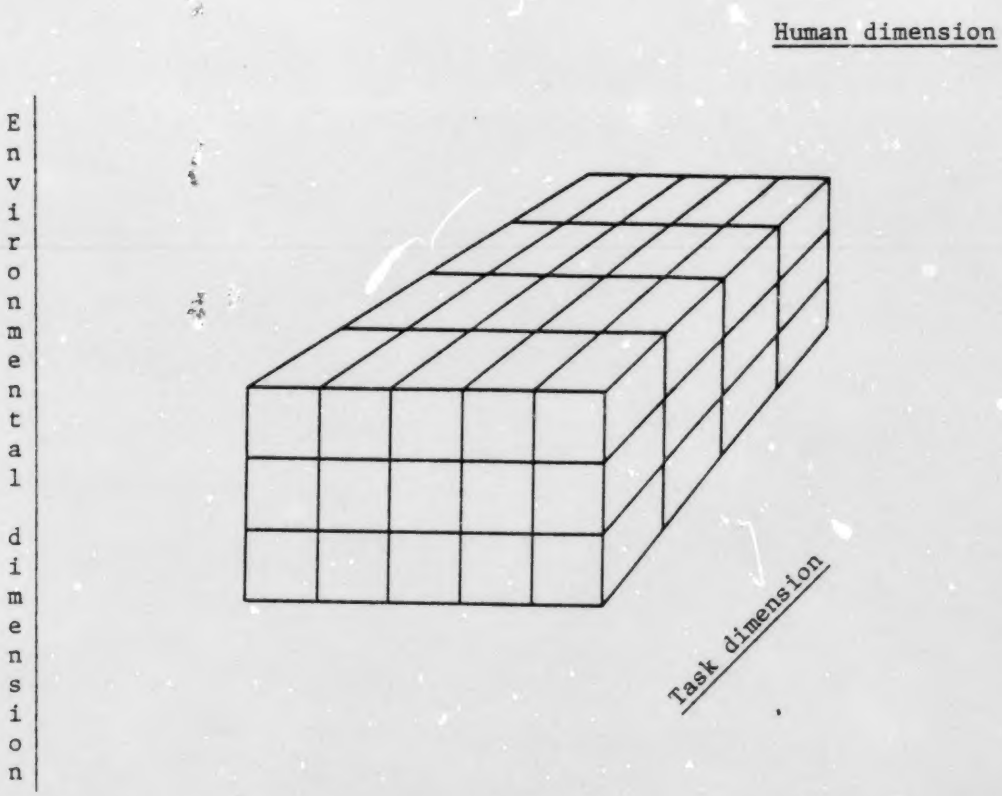

Table 1

Competencies categorized by competence dimension

Study	Total #	Dimension		
		Task	Human	Environment[a]
Ferns (1971)	9	5	4	1
Albright, Nichols & Rinchak (1975)	112	112	0	1
Sheppard (1975)	16	15	1	1
Eads, Hogan, Babcock & Block (1975)	187	161	26	1
Andreyka, Blank & Clark (1975)	90	84	1	1
Brolin (1976)	31	31	0	1
Phelps (1976)	49	49	0	1
Bayne & Caton (1979)	42	42	0	1
Hamilton & Harrington (1980)	380	380	0	1
Tullock & Omvig (1980)	22	21	1	1
Winkler & Ertel (1980)	63	49	14	1
Kienast & Lovelace (1981)	96	92	4	1

[a]Studies were each given "credit" for one environment even though most did not explain the environment to any great degree.

Table 2

Relations between competence dimensions and instructional strategies

Dimensions	Items (examples)	Instructional Strategies by Dimension	Integrated Instruction
Task	*Develop vocational goals and objectives for the IEP *Provide input to advisory committees	*Discussion *Projects *Readings *Shadowing	
Human	*Exhibit diplomacy in interaction with others *Serve as an effective mediator between individuals	*Role Playing *Case Studies *Simulations	*Internships *Externships *Try out in own classes
Environment	*VSNRE work setting *Vocational teacher work setting *Urban setting *Inner city setting	*Discussion *Projects *Observation	

Figure 2

Integrated instruction versus instruction by dimension